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"Reselection Optimization in Mobile WirelessConfirm. No. 6905
 Communication Devices And Methods Therefor"   Examiner L. West
Atty. Docket No. CS20456RL   Art Unit 2682

Allowability of Claims Over Nuefeld

Claims 1-14 stand rejected under 35 USC 102(e) as being anticipated by U.S. Patent No. 6,278,703 (Nuefeld). Office Action, 14 January
5   2004. The Examiner maintains the rejection stated in the Office Action of 9 July 2003, para. 2.

Summary of Nuefeld

10   Nuefeld discloses improving handoff performance by increasing the number of active and neighbor signal searches performed during active RF power periods. Nuefled defers processing of some or all signal search results until after the RF power period has ended to provide additional processing resources required for performing the increased number of signal searches.
15   Nuefeld, col. 5, line 61 - col. 6, line 8; col. 7, line 3; and col. 8, lines 17-26. This is also illustrated graphically in Nuefeld by comparison of FIGS. 4 and 6A, . wherein elimination of the signal-processing ("CPU") interval from each period of FIG. 4 permits additional neighbor signal acquisitions, as illustrated in FIG 6A.
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Discussion of Patentability of Independent Claim 1

Regarding Claim 1, contrary to the Examiner's assertion, Nuefeld does not disclose a method in a mobile wireless communication device,
25   comprising

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receiving present paging information;
performing present signal measurements while receiving the present paging information;
performing present reselection processing on prior signal measurements while performing present signal measurements.

Claim 1 covers the overlapping signal measurement and processing illustrated in exemplary FIG. 4 of the instant patent application. In Claim 1, at least some of the reselection processing occurs while performing signal measurements, i.e., while the radio is energized.

As noted, Nuefeld defers processing of some or all neighbor signal measurements until after the RF power period has ended. In the invention of Claim 1, "reselection processing [occurs] while performing signal measurements" (i.e., during the RF power period). Moreover, according to Claim 1, reselection processing during a particular power period is based on signal measurements made during an earlier RF power period, e.g., the processing of signal measurements lags the RF power period during which the measurements were made.

The passage of Nuefled referenced by the Examiner discusses the reduction of processor overhead by eliminating context switching, i.e., the switching of data associated with different processing tasks in and out of processor memory, e.g., registers, cache, etc., by performing any signal processing after completion of the paging task or by using a DMA controller. Nuefeld, col. 7, lines 23-58. Nuefeld also discloses increasing the number of neighbor signal searches during the RF power period by reducing (based on multi-path delay time information) the search window for each signal.

Claim 1 and the claims that depend therefrom are thus patentably distinguished over Nuefled.

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Discussion of Patentability of Claim 2

Regarding Claim 2, contrary to the Examiner's assertion, Nuefeld does not disclose

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... performing the prior signal measurements while receiving prior paging information before receiving the present paging information

10   in combination with the limitations of Claim 1. In Claims 1 & 2, current processing is performed on signal measurements obtained in a prior measurement period. Claims 1 and 2 cover the process exemplified in FIG. 2 wherein measurements made at (230) are processed at (252) while new measurements are made at (240). Claim 2 is thus further patentably
15   distinguished over Nuefeld.

Discussion of Patentability of Claim 3

Regarding Claim 3, contrary to the Examiner's assertion, Nuefeld
20   does not disclose

... reducing power consumption by performing the present reselection processing on the prior signal measurements while receiving the present paging information, performing the prior
25   signal measurements while receiving prior paging information before receiving the present paging information"

in combination with the limitations of Claim 1 and any intervening claims. Nuefeld does not perform reselection processing on prior signal measurements

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while obtaining present signal measurements.   Claim 3 is thus further patentably distinguished over Nuefeld.

Discussion of Patentability of Claim 4

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Regarding Claim 4, contrary to the Examiner's assertion, Nuefeld does not disclose

> ... reducing power consumption by performing the present reselection processing, based upon the prior signal measurements, and receiving the present paging information in a substantially overlapping time period

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in combination with the limitations of Claim 1 and any intervening claims. Claim 4 is thus further patentably distinguished over Nuefeld.

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Discussion of Patentability of Claim 5

Regarding Claim 5, contrary to the Examiner's assertion, Nuefeld does not disclose

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> ... entering a minimal power consumption mode while not receiving paging information and not performing signal measurements and not performing reselection processing

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in combination with the limitations of Claim 1. Nuefeld discloses at least some of signal processing occurs after the RF power period (when not performing signal measurements), and thus Nuefeld cannot enter minimal power

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consumption mode while not performing signal measurements. Claim 5 is thus further patentably distinguished over Nuefeld.

Discussion of Patentability of Claim 6

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Regarding Claim 6, contrary to the Examiner's assertion, Nuefeld does not disclose

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... maximizing minimal power consumption mode operation by performing the reselection processing while substantially concurrently receiving the paging information

in combination with the limitations of Claim 1 and any intervening claims. Nuefeld discloses the performance of signal processing after performing signal

15   measurements, and thus Nuefeld cannot enter minimal power consumption mode while not performing signal measurements. Claim 6 is thus further patentably distinguished over Nuefeld.
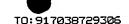
Discussion of Patentability of Claim 7

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Regarding Claim 7, contrary to the Examiner's assertion, Nuefeld does not disclose

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... receiving present paging information, performing present signal measurements, and performing reselection processing while operating the wireless communication device in idle mode

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in combination with the limitations of Claim 1 and any intervening claims. Claim 7 is thus further patentably distinguished over Nuefeld.

Discussion of Patentability of Independent Claim 8

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Regarding Claim 8, contrary to the Examiner's assertion, Nuefeld does not disclose a "... method in a mobile wireless communication device that receives paging information and performs neighbor signal measurements, comprising"

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      receiving present paging information;
      performing present signal measurements while receiving the present paging information;
      performing reselection processing while receiving present
15 paging information;
      reducing power consumption by performing the reselection processing on prior signal measurements performed while receiving prior paging information.

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As noted above, Nuefeld discloses processing signal search results (neighbor cell signal measurements) after the RF power period has ended. Nuelfeld, col. 6, lines 50-54, col. 8, lines 17-40. Also, Nuefeld concedes that postponing processing until after the RF power period increases power consumption, but contends that any increase in power consumption will be
25 offset by power savings resulting from the avoidance of link maintenance conditions (RF activation for the sole purpose of obtaining signal measurements). Nuefeld, col. 8, lines 51-57. Claim 8 and the claims that depend therefrom are thus patentably distinguished over Nuefled.

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Discussion of Patentability of Claim 9

Regarding Claim 9, contrary to the Examiner's assertion, Nuefeld does not disclose

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... entering a minimal power consumption mode when not receiving paging information and not performing signal measurements and not performing reselection processing

10 in combination with the limitations of Claim 8. Nuefeld discloses the performance of signal processing after the RF power period during which signal measurements are made has ended, and thus Nuefeld does not and cannot enter minimal power consumption mode while not performing signal measurements. Claim 9 is thus further patentably distinguished over Nuefeld.

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Discussion of Patentability of Claim 10

Regarding Claim 10, contrary to the Examiner's assertion, Nuefeld does not disclose

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... maximizing minimal power consumption mode operation by performing the reselection processing while substantially concurrently receiving the paging information

25 in combination with the limitations of Claim 8. Nuefeld discloses the performance of signal processing after the RF power period has ended, and thus Nuefeld cannot meet the limitations of Claim 10. Claim 10 is thus further patentably distinguished over Nuefeld.

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Discussion of Patentability of Claim 11

        Regarding Claim 11, contrary to the Examiner's assertion, Nuefeld

does not disclose

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                ... receiving present paging information, performing present
                signal measurements, and performing reselection processing
                while operating the wireless communication device in idle mode

10   in combination with the limitations of Claim 8 and any intervening claims.

Claim 11 is thus further patentably distinguished over Nuefeld.

Discussion of Patentability of Independent Claim 12

15   Regarding Claim 12, contrary to the Examiner's assertion, Nuefeld

does not disclose a

                ... method in a wireless communication device, comprising:
                receiving periodic paging information;
20   performing periodic signal measurements;
                performing periodic reselection processing;
                reducing power consumption by receiving at least a portion
                of the periodic paging information concurrently with performing
                at least a portion of the periodic signal measurements and
25   performing at least a portion of the periodic reselection
                processing.

        Nuefeld does not and cannot meet the "concurrently" limitations

of Claim 12, since Nuefeld performs signal processing after the RF power

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period, i.e., after the obtaining signal measurements.   Claim 12 is thus
patentably distinguished over Nuefeld.

Discussion of Patentability of Claim 13

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       Regarding Claim 13, contrary to the Examiner's assertion, Nuefeld
does not disclose

          ... performing present reselection processing on prior signal
10   measurements while performing present signal measurements

in combination with the limitations of Claim 12. As noted, Nuefeld does not
perform reselection processing on prior signal measurements at the same time
present signal measurements are obtained. Claim 13 is thus further patentably
15   distinguished over Nuefeld.

Discussion of Patentability of Claim 14

       Regarding Claim 14, contrary to the Examiner's assertion, Nuefeld
20   does not disclose

          ... operating in a minimal power consumption mode when not
          receiving periodic paging information and not performing
          periodic signal measurements and not performing periodic
25   reselection processing

in combination with the limitations of Claim 12. Nuefeld discloses the
performance of signal processing after the RF power period during which

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signal measurements are obtained, and thus Nuefeld cannot enter minimal

power consumption mode while not performing signal measurements. Claim

14 is thus further patentably distinguished over Nuefeld.

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Allowability of Claims Over Nuefeld & Wang

Claims 15-20 stand rejected under 35 USC 103(a) as being

unpatentable over Nuefeld in view of U.S. Patent No. 6,480,504 (Wang).

10   Official Action, 9 July 2003, para. 4. The Examiner concedes that Nuefeld does

not disclose TDMA but relies upon Wang to satisfy the TDMA limitations.

Discussion of Patentability of Independent Claim 15

15   Regarding Claim 15, contrary to the Examiner's assertion, Nuefeld

does not disclose a

... method in a TDMA wireless communication device that
receives periodic paging blocks and performs periodic neighbor
20   signal measurements, comprising:
receiving a present paging block;
performing   present   neighbor   cell   signal   strength
measurements while receiving the present paging block;
performing reselection processing for prior neighbor cell
25   signal strength measurements while receiving the present paging
block and performing the present neighbor cell signal strength
measurements.

Nuefeld defers processing of some or all neighbor signal

30   measurements until after the RF power period has ended. In Claim 15, "prior

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neighbor cell signal strength measurements" are processed while receiving present paging information, i.e., during the RF power period. Nuefeld performs processing on present signal measurements after the RF pwer period has ended. Wang is not relied upon to meet any other than the TDMA

5   limitations. Claim 15 and the claims that depend therefrom are thus patentably distinguished over Nuefled and Wang.

Discussion of Patentability of Claim 16

10   Regarding Claim 16, contrary to the Examiner's assertion, Nuefeld does not disclose

... reducing power consumption by operating in a minimal power consumption mode when not receiving periodic paging blocks and not performing periodic neighbor cell signal strength
15   measurements and not performing reselection processing

in combination with the limitations of Claim 15. Nuefeld does not perform reselection processing on prior signal measurements while obtaining present
20   signal measurements. Claim 16 is thus further patentably distinguished over Nuefeld and Wang.

Discussion of Patentability of Claim 17

25   Regarding Claim 17, contrary to the Examiner's assertion, Nuefeld does not disclose

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... reducing power consumption by receiving at least a portion of the periodic paging blocks, performing at least a portion of the periodic neighbor cell signal strength measurements, and performing at least a portion of the reselection processing concurrently

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in combination with the limitations of Claim 15 and any intervening claims. Nuefeld does not perform reselection processing while obtaining present signal measurements. Nuefeld processes the signal measurements after

10   obtaining the signal measurements. Claim 17 is thus further patentably distinguished over Nuefeld and Wang.

Discussion of Patentability of Independent Claim 18

15   Regarding Claim 18, contrary to the Examiner's assertion, Nuefeld does not disclose a

... method in a WCDMA wireless communication device that receives periodic paging indicator channel blocks and
20   performs periodic reselection processing, comprising:
... receiving a present paging indicator channel block;
performing present signal measurements while receiving the present paging indicator channel block;
performing reselection processing for prior signal
25   measurements while receiving the present paging indicator channel block and performing the present signal measurements.

Nuefeld defers processing of some or all neighbor signal measurements until after the RF power period has ended. In Claim 18, "prior
30   signal measurements" are processed while receiving present paging

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information, i.e. during the RF power period.   Claim 18 and the claims that

depend therefrom are thus patentably distinguished over Nuefled and Wang.

Discussion of Patentability of Claim 19

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Regarding Claim 19, contrary to the Examiner's assertion, Nuefeld

does not disclose

... reducing power consumption by operating in a minimal power
10   consumption mode when not receiving periodic paging indicator
            blocks and when not performing periodic signal measurements
            and not performing reselection processing

in combination with the limitations of Claim 19.   Nuefeld does not perform

15   reselection processing on prior signal measurements while obtaining present

signal measurements.   Claim 19 is thus further patentably distinguished over

Nuefeld.

Discussion of Patentability of Claim 20

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Regarding Claim 20, contrary to the Examiner's assertion, Nuefeld

does not disclose

... performing signal measurements between receiving periodic
25   paging indicator blocks when the period between the periodic
            paging indicator blocks is greater than a predetermined period

in combination with the limitations of Claim 15 and any intervening claims.

Nuefeld does not perform reselection processing while obtaining present

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